National Tubes Limited

Technical Specification

Under the license from American Petroleum Institute (API), Line pipes for oil and gas transmission are produced strictly according to the requirements of API Spec 5L, Q1 and ISO 9001. The Line pipes also correspond to the Grade A – 53B of the ASTM (American Society for Testing and Materials) specification.

Criteria	Particulars	Standards & Pipe/Steel Grade	
		API Spec 5L PSL 1	
		L245 or B	L290 of X42
Chemical Composition (%)	Carbon Manganese Sulphur Phosphorus	0.26 max. 1.20 max. 0.030 max. 0.030 max.	0.26 max. 1.30 max. 0.030 max. 0.030 max.
Tensile Properties	Yield Strength (min.) MPa psi kg_f/mm^2	 245 35 500 25	 290 42 100 29.6
	Tensile Strength (min.) MPa psi kg_f/mm^2	 415 60 200 42.33	 415 60 200 42.33
	Elongation on a test specimen of 2" gauge length and 0.13 sq. in. cross-section, % (min.).	21	21

Note: 1 kgf/mm^2 = 9.8 MPa, 1 MPa = 0.102 kgf/mm^2, 1 kgf/mm^2 = 1422.3 psi
1 MPa = 145.0377 psi, 1 psi = 7.031 x 10^{-4} kgf/mm^2 ,1 psi = 0.07030814 kgf/cm^2

Test Pressure

Hydrostatic Test Pressures for Galvanized Pipe (BS 729)

Series and class of pipe	Nominal Dia		Wall Thickness	Out side Diameter		Hydrostatic Test Pressure
	in	mm	mm	mm Max	min	
Light Series Class-A	½	15	2.00	21.4	21.0	710 psi (50 kg/cm2)
	¾	20	2.35	26.9	26.4	
	1	25	2.65	33.8	33.2	
	1¼	32	2.65	42.5	41.9	
	1½	40	2.90	48.4	47.8	
	2	50	2.90	60.2	59.6	
	2½	65	3.25	76.0	75.2	
	3	80	3.25	88.7	87.9	
	4	100	3.65	113.9	113.0	
Medium Series Class-B	½	15	2.65	21.8	21.0	710 psi (50 Kg/cm2)
	¾	20	2.65	27.3	26.5	
	1	25	3.25	34.2	33.3	
	1¼	32	3.25	42.9	42.0	
	1½	40	3.25	48.8	47.9	
	2	50	3.65	60.8	59.7	
	2½	65	3.65	76.6	75.3	
	3	80	4.05	89.5	88.0	
	4	100	4.50	115.0	113.1	
	5	125	4.85	140.8	138.5	
	6	150	4.85	166.5	163.9	
Heavy Series	½	15	3.25	21.8	21.0	710 psi (50 Kg/cm2)
	¾	20	3.25	27.3	26.5	
	1	25	4.05	34.2	33.3	
	1¼	32	4.05	42.9	42.0	
	1½	40	4.05	48.8	47.9	
	2	50	4.50	60.8	59.7	
	2½	65	4.50	76.6	75.3	
	3	80	4.85	89.5	88.0	
	4	100	5.40	115.0	113.1	
	5	125	5.40	140.8	138.5	
	6	150	5.40	166.5	163.9	